

REMARKS

This is in response to the Office Action mailed on December 13, 2005, in which claims 3, 5, 8-13, 17-21, 26, and 27 were withdrawn from consideration, the drawings were objected to, and claims 1, 2, 4, 5, 7, 14-16, and 22-25 were rejected under 35 U.S.C. § 102(e) as being anticipated by Applicant Admitted Prior Art (AAPA). With this Amendment, the drawings and specification are amended, claim 27 is canceled, and claims 1, 16, and 22 are amended. In addition, it is requested that claims 3, 5, 8-11, 17, 18, and 26 be reinstated for consideration and examination on the merits because these claims read on the elected species, and because these claims depend from claims that are in a condition for allowance. Claims 1-26 are pending in the present application.

Drawings

Figures 1, 3a, and 3b have been amended to add the legend "Prior Art" to each drawing. Replacement drawing sheets are submitted herewith. These amendments bring the drawings into compliance with MPEP § 608.02(g). Thus, it is respectfully submitted that the objection to the drawings should accordingly be withdrawn.

Specification

As noted on page 5 of the Office Action, the terms magnetoresistive layer and quiescent state as used throughout the application was different than the common use of these terms in the art. With this Amendment, the specification has been amended to clarify that the terms "magnetoresistive layer" and "spacer layer" as used in the present application are synonymous, and that the terms "quiescent" and "unbiased" as used in the present application are synonymous. A rewording of a passage where the same meaning remains intact is permissible. MPEP 2163.07, citing *In re Anderson*, 471 F.2d 1237 (CCPA 1973). The mere inclusion of an art recognized definition known at the time of filing an application would not be considered new matter. MPEP 2163.07. Because the changes to the specification merely add art recognized definitions known at the time of filing the application, no new matter is introduced by these changes.

Claim Rejections

Claims 1, 2, 4, 5, 7, 14-16, and 22-25 were rejected under 35 U.S.C. § 102(e) as being anticipated by Applicant Admitted Prior Art (AAPA). In order to reject a claim under § 102(e), the reference must teach each and every limitation of the claims. MPEP 2131; *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987). With this Amendment, claims 1, 16, and 22 are amended. Amended claim 1 recites a magnetoresistive sensor comprising a tri-layer reader stack including a first ferromagnetic layer, a second ferromagnetic layer, and a magnetoresistive layer positioned therebetween, and biasing means positioned with respect to the tri-layer reader stack and proximate to a front surface of the magnetoresistive sensor for biasing a magnetization of the first ferromagnetic layer substantially orthogonal to a magnetization of the second ferromagnetic layer. Amended claim 16 recites a magnetoresistive sensor comprising a first ferromagnetic free layer, a second ferromagnetic free layer, a magnetoresistive layer located between the first and second ferromagnetic free layers, and at least one biasing structure positioned with respect to the first and second ferromagnetic free layers and proximate to a front surface of the magnetoresistive sensor to bias a magnetization of the first ferromagnetic free layer substantially orthogonal to a magnetization of the second ferromagnetic free layer. By positioning a biasing means proximate to a front surface of the tri-layer reader stack, both the front edge and the back edge of free layers 12 and 16 are subject to the biasing field produced by the biasing means. This allows for greater control over the magnetic domains throughout free layers 12 and 16, thereby offering more control over the magnetic alignment between the two free layers and hysteresis-free magnetization reversal of the free layers. Page 15, lines 24-28.

The tri-layer reader stacks shown in FIGS. 3a and 3b are biased conventionally using a permanent magnet 22 to provide the stabilizing biasing field. Because permanent magnet 22 is adjacent only the back edge of tri-layer reader stack 10 (distal from the air bearing surface of the reader stack), magnetic domains through free layers 12 and 16 will be under inconsistent control. The direction that the

magnetization takes within a domain in the absence of an external magnetic field is represented by the easy axes of the particles of the material. Accordingly, while the magnetization directions within the domains near the back edge of free layers 12 and 16 remain under strong control due to the magnetic field produced by permanent magnet 22, the magnetization directions within the domains near the front (i.e., at the ABS) and side edges of free layers 12 and 16 are only loosely controlled by the magnetic field produced by permanent magnet 22. Thus, the magnetization directions within the domains near the front and side edges of free layers 12 and 16 are partially influenced by the shape anisotropy of the layers, which leads to inconsistent reader performance. Page 8, line 22 to page 9, line 5. Because FIGS. 3a and 3b do not show a biasing means *proximate to a front surface of the tri-layer reader stack* for biasing a magnetization of the first ferromagnetic layer substantially orthogonal to a magnetization of the second ferromagnetic layer, the recited elements of claims 1 and 16 are not disclosed by AAPA, and the rejection of claims 1 and 16 under 35 U.S.C. § 102(e) should be withdrawn.

Claims 2, 4, 5, 7, 14, 15, and 22-25 were also rejected under 35 U.S.C. § 102(e) as being anticipated by AAPA. Claims 2, 4, 5, 7, 14, and 15 depend from claim 1, and claims 22-25 depend from claim 16. As discussed above, claims 1 and 16 are not anticipated or otherwise taught by AAPA. Therefore, claims 2, 4, 5, 7, 14, 15, and 22-25 also are not anticipated or otherwise taught by AAPA.

Claims 3, 5, 8-13, 17-21, 26, and 27 were previously withdrawn from consideration as being drawn to a non-elected species. Claims 3, 5, and 8-13 depend from allowable independent claim 1, and claims 17-21 and 26 depend from allowable independent claim 16. Thus, claim 3, 5, 8-13, 17-21, and 26 should also be considered and allowed, since they depend from allowable generic independent claims. See MPEP 809.02 and 37 C.F.R. 1.146. Alternatively, if claims 1 and 16 are found to not be allowable, applicant submits that previously withdrawn claims 3, 5, 8-11, 17, 18, and 26 read on the elected species, and thus should be reinstated for consideration and examination on the merits.

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CONCLUSION

In view of the foregoing, it is believed that all claims in the present application are in condition for allowance. Reconsideration and allowance of claims 1-26 are respectfully requested.

Respectfully submitted,

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